

This Page Is Inserted by IFW Operations
and is not a part of the Official Record

BEST AVAILABLE IMAGES

Defective images within this document are accurate representations of the original documents submitted by the applicant.

Defects in the images may include (but are not limited to):

- BLACK BORDERS
- TEXT CUT OFF AT TOP, BOTTOM OR SIDES
- FADED TEXT
- ILLEGIBLE TEXT
- SKEWED/SLANTED IMAGES
- COLORED PHOTOS
- BLACK OR VERY BLACK AND WHITE DARK PHOTOS
- GRAY SCALE DOCUMENTS

IMAGES ARE BEST AVAILABLE COPY.

**As rescanning documents *will not* correct images,
please do not report the images to the
Image Problems Mailbox.**

THIS PAGE BLANK (USPTO)

#3

Docket No.: 1509-220PATENT**IN THE UNITED STATES PATENT AND TRADEMARK OFFICE**

In re Application of :

Richard BROWN et al. :

Serial No. Not yet assigned : Group Art Unit: Not yet assigned

Filed: herewith : Examiner: N/A

For: IMPROVEMENTS IN AND RELATING TO CREDENTIAL TRANSFER METHODS

CLAIM OF PRIORITY AND
TRANSMITTAL OF CERTIFIED PRIORITY DOCUMENT

Assistant Commissioner For Patents
 Washington, D.C. 20231

Dear Sir:

In accordance with the provisions of 35 U.S.C. 119, Applicant hereby claims the priority of:

Great Britain Patent Application No. 0103735.7 filed February 15, 2001
 cited in the Declaration of the present application.

The certified copy is submitted herewith.

Respectfully submitted,

LOWE HAUPTMAN GILMAN & BERNER, LLP


 Allan M. Lowe
 Registration No. 19,641

1700 Diagonal Road, Suite 310
 Alexandria, Virginia 22314
 (703) 684-1111
 AML:tmp

 jc997 U.S. PTO
 09/955222

 09/19/01

THIS PAGE BLANK (USPTO)



INVESTOR IN PEOPLE

The Patent Office
Concept House
Cardiff Road
Newport
South Wales
NP10 8QQ

JC997 U.S. PTO
09/955222



09/19/01

I, the undersigned, being an officer duly authorised in accordance with Section 74(1) and (4) of the Deregulation & Contracting Out Act 1994, to sign and issue certificates on behalf of the Comptroller-General, hereby certify that annexed hereto is a true copy of the documents as originally filed in connection with the patent application identified therein.

In accordance with the Patents (Companies Re-registration) Rules 1982, if a company named in this certificate and any accompanying documents has re-registered under the Companies Act 1980 with the same name as that with which it was registered immediately before re-registration save for the substitution as, or inclusion as, the last part of the name of the words "public limited company" or their equivalents in Welsh, references to the name of the company in this certificate and any accompanying documents shall be treated as references to the name with which it is so re-registered.

In accordance with the rules, the words "public limited company" may be replaced by p.l.c., plc, P.L.C. or PLC.

Re-registration under the Companies Act does not constitute a new legal entity but merely subjects the company to certain additional company law rules.

Signed

Dated 17 April 2001

THIS PAGE BLANK (USPTO)



15FEB01 E606339-1 D01463

001/000000-0103735.1 The Patent Office

Request for grant of a patent

(See the notes on the back of this form. You can also get an explanatory leaflet from the Patent Office to help you fill in this form)

| |
|-------------------|
| THE PATENT OFFICE |
| 15 FEB 2001 |
| NEWPORT |

 Cardiff Road
Newport
South Wales
NP10 8QQ

30003038 GB

1. Your reference

2. Patent application number

(The Date:

0103735.7

15 FEB 2001

3. Full name and postcode of the or of each applicant (underline all surnames)

 Hewlett-Packard Company
3000 Hanover Street
Palo Alto
CA 94304, USA

Patents ADP number (if you know it)

496588001

If the applicant is a corporate body, give the country/state of its incorporation

4. Title of the invention Improvements In and Relating to Credential Transfer Methods

5. Name of your agent (if you have one)

 Richard A. Lawrence
Hewlett-Packard Ltd, IP Section
Filton Road
Stoke Gifford
Bristol BS34 8QZ

"Address for service" in the United Kingdom to which all correspondence should be sent (including the postcode)

Patents ADP number (if you know it)

6. If you are declaring priority from one or more earlier patent applications, give the country and the date of filing of the or of each of these earlier applications and (if you know it) the or each application number

Country

Priority application number
(if you know it)Date of filing
(day / month / year)

7. If this application is divided or otherwise derived from an earlier UK application, give the number and the filing date of the earlier application

Number of earlier application

Date of filing
(day / month / year)

8. Is a statement of inventorship and of right to grant of a patent required in support of this request? (Answer 'Yes' if:

Yes

- a) any applicant named in part 3 is not an inventor, or
- b) there is an inventor who is not named as an applicant, or
- c) any named applicant is a corporate body.

See note (d))

9. Enter the number of sheets for any of the following items you are filing with this form.
Do not count copies of the same document

Continuation sheets of this form

| Description | 11 |
|-------------|----|
| Claim(s) | 3 |
| Abstract | 1 |
| Drawing(s) | 3 |

3/8

10. If you are also filing any of the following, state how many against each item.

| | |
|--|---|
| Priority documents | - |
| Translations of priority documents | - |
| Statement of inventorship and right to grant of a patent (Patents Form 7/77) | 1 |
| Request for preliminary examination and search (Patents Form 9/77) | 1 |
| Request for substantive examination (Patents Form 10/77) | - |
| Any other documents (please specify) | - |

Fee Sheet

11. I/We request the grant of a patent on the basis of this application.

Signature

Richard A. Lawrence

Date 14/02/2001

12. Name and daytime telephone number of person to contact in the United Kingdom

Meg Joyce Tel: 0117-312-9068

Warning

After an application for a patent has been filed, the Comptroller of the Patent Office will consider whether publication or communication of the invention should be prohibited or restricted under Section 22 of the Patents Act 1977. You will be informed if it is necessary to prohibit or restrict your invention in this way. Furthermore, if you live in the United Kingdom, Section 23 of the Patents Act 1977 stops you from applying for a patent abroad without first getting written permission from the Patent Office unless an application has been filed at least 6 weeks beforehand in the United Kingdom for a patent for the same invention and either no direction prohibiting publication or communication has been given, or any such direction has been revoked.

Notes

- If you need help to fill in this form or you have any questions, please contact the Patent Office on 08459 500505.
- Write your answers in capital letters using black ink or you may type them.
- If there is not enough space for all the relevant details on any part of this form, please continue on a separate sheet of paper and write "see continuation sheet" in the relevant part(s). Any continuation sheet should be attached to this form.
- If you have answered 'Yes' Patents Form 7/77 will need to be filed.
- Once you have filled in the form you must remember to sign and date it.
- For details of the fee and ways to pay please contact the Patent Office.

**Improvements In and Relating to Credential Transfer
Methods**

The present invention relates to credential transfer
5 methods, to methods of communication and to corresponding
systems. The present invention further relates to digital
credential indices.

In a distributed electronic network, such as the internet,
10 when a user approaches a service provider for a service
(which may, by way of example, be a financial transaction)
the service provider may require in order to provide this
service one or more credentials from the user. Generally
a credential is a data structure provided to the user
15 (sometimes referred to as the "bearer") for a purpose,
with some acknowledged way to verify the user's right to
use the credential. A credential normally will relate to
an attribute such as the identity of the bearer. For
instance, if the user is a customer seeking to purchase
20 goods from a service provider, the service provider may
require from the customer credit card details (credit card
type, credit card number, name on credit card and expiry
date), an address and perhaps other personal details such
as, say, a passport number or phone number. In order to
25 make a purchase from the service provider, the user must
provide the service provider with the details requested.

Such a method and system has several disadvantages.
First, it takes control away from the user/customer (the
30 term "user" from now on is intended to include reference to
"customer"). That is, the user does not have control over
the credentials to be provided.

Secondly, such a system and method is binary in the sense that the service provider provides authorisation (ie accepts the credentials) and allows the transaction to proceed or does not. There is no middle ground.

Preferred embodiments of the present invention aim to obviate or overcome disadvantages of the prior art such as those described above.

According to the present invention in a first aspect, there is provided a credential transfer method for use on a distributed electronic network, the method comprising the steps of a sender communicating to a recipient a credential index comprising an index referring to at least one credential, the recipient selecting at least one of the credentials from the index of at least one credential provided by the sender, the recipient communicating to the sender an indication of the selected at least one credential and the sender providing to the recipient at least one credential corresponding to the selected at least one credential.

According to the present invention in a second aspect, there is provided a method of communication for use on a distributed electronic network, which method comprises a credential transfer method according to the first aspect of the invention.

According to the present invention in a third aspect, there is provided a system configured and adapted to

operate according to the first or second aspects of the invention.

According to the present invention in a fourth aspect, there is provided a digital credential index comprising an
5 index to at least one credential.

The sender will generally, but not necessarily, be the bearer of the credentials. The sender may send data to the recipient directly or indirectly through a third
10 party. The recipient may send data to the sender directly or indirectly through a third party. Reference to "direct" communication is via a distributed electronic network.

15 Suitably, the method comprises the additional step of determining whether the at least one credential is sufficient and communicating the result of the determination to the sender.

20 Suitably, the method comprises the additional step of determining a service level according to the at least one credential indexed in the credential index and the recipient communicating the service level to the sender.

25 Suitably, the sender communicates a plurality of credential indices to the recipient.

Suitably, the method comprises the additional step of determining a service level according to each of the
30 plurality of credential indices communicated to the recipient by the sender and communicating the service level corresponding to at least one of the credential

indices to the sender. Suitably, a service level is communicated to the sender for each credential index communicated to the recipient by the sender.

5 Suitably, the credential comprises a digital credential.

Suitably, the credential index comprises indices to a plurality of credentials.

10 Suitably, the method comprises the additional step of the sender selecting a credential index from a plurality of available credential indices.

15 The present invention will now be described, by way of example only, with reference to the drawings that follow; in which:

20 Figure 1 is a schematic illustration of a distributed electronic network illustrating features of embodiments of the present invention.

Figure 2 is a functional flow diagram illustration of an embodiment of the present invention.

25 Figure 3 is a schematic workflow diagram corresponding to the embodiment shown in Figure 2.

Figure 4 is a functional flow diagram illustration of another embodiment of the present invention.

30

Referring to Figure 1, there is shown a distributed electronic network 2 comprising a user's terminal 4 (also

used to designate the user generally) in electronic communication with a service provider 6 (the recipient) via the internet, indicated schematically at 8. In this embodiment the user 4 is the sender. It will be
5 appreciated that embodiments of the present invention can be operated across other distributed electronic networks such as wide area networks or local area networks.

The user 4 is the bearer of a plurality of digital
10 credentials obtained previously.

Referring to Figures 2 and 3 of the drawings that follow, a first embodiment of the present invention will now be described.

15 Figure 2 is a step-by-step flow diagram of the first embodiment, while Figure 3 is a corresponding overview of the workflow.

20 In step 200 (Figure 2) the user 4 creates a plurality of different credential indices 300A-N. Embodiments of the present invention can operate with a single credential index 300, but in preferred embodiments the user generates a plurality of credential indices 300 ready for submission
25 to service providers as desired. Each credential index 300 contains details of the credentials 302A-M the user 4 is willing to offer to the service provider 6. The credentials 302A-M are those the user 4 has available for selection to provide to a service provider. The number of
30 credentials 302 need not (and generally will not) correspond to the number of credential indices 300. (For the sake of clarity, not all credential indices nor

credentials are referenced in Figure 3). So, for instance, the user 4 may include in a first credential index 300A reference to an address and a credit card details. In a second credential index 300B the user 4 5 may, for instance, include reference to a passport number and a telephone number. In a third credential index 300C the user 4 may, for instance, include reference to their employer's name and address and their bank details. The selection of to which credentials 302 are referenced in 10 which credential index 300 is left to the user 4.

Credential indices 300 may contain simple reference to a credential 302 or be descriptive of the credential 302. For instance, the file of the credential may simply state 15 that the credentials 302 are the user's name and address without giving any details of them. Alternatively or in addition the credential indices 300 may contain thumbnails of the relevant credentials. A thumbnail of a credential is a portion of it, a summary or a constrained description 20 thereof. The key feature is that the credential itself is not disclosed. For instance a credential index 300 may include the first 12 digits of a credit card number or the first line of an address. A credential index may, alternatively, contain reference to, say, a credit card 25 number (without disclosing the number itself) and a credit limit.

In an extreme example a credential index 300 may refer to 30 a single credential 302. For the purpose of the embodiments described it is assumed that each credential index 300 references a plurality of credentials 302.

In step 202, the user 4 generates a package of credentials 302 corresponding to those indicated to be available in step 200. The credentials 302 may be generated separately or be combined in single credential document. This step 5 can take place earlier or later in the procedure up to when the user 4 provides the credentials 302.

In step 204, the user 4, having decided to approach a service provider 6 for a service decides which credentials 10 302 he/she is willing to offer to the service provider 6 and provides a corresponding credential index to the service provider 6. For the present embodiment, the user 4 offers credentials 302A and 302B referred to in a credential index 300A. The credentials 302 the user 4 is 15 willing to offer to the service provider 6 may vary, for instance, because of the user's confidence in the security of the site and/or the user's knowledge of the service provider involved in the transaction.

20 In step 206 the service provider 6, upon receipt of the credential index 300A from the user 4 reviews the credentials 302A and 302B offered decides (the decision making process may be automated) whether the type of credentials offered are sufficient to enable the service 25 provider 6 to provide the service requested. If the service provider 6 is willing to accept the credentials 302A and 302B for the service it responds, in step 208 that the credentials 302A and 302B offered in the credential index 300A are acceptable and, in step 210, the 30 user 4 transmits the credentials 302A and 302B corresponding to those referred to in the credential index

300A to the service provider 6. The service provider 6 then, in step 212 provides the corresponding service.

If, at step 206, the service provider 6 decides that the 5 credentials 302A and 302B offered in the credential index 300A are not sufficient for the service provider 6 to provide the service it informs the user 4 to that effect. The user 4 then has the choice of either providing a new index of credentials (see step 204) or terminating the 10 transaction.

Alternatively, the service provider 6 may just select one of the credentials 302A or 302B and indicate that this is sufficient for a transaction. The user 4 then transmits 15 the relevant credential to the service provider 6.

Referring to Figure 4 of the drawings that follow, a further embodiment of the present invention is illustrated. In Figure 4 the steps 400 to 404 correspond 20 to those of steps 200 to 204 in relation to Figure 2 and so will not be explained in detail here.

In step 406 the recipient 6 determines what service level is appropriate to the credentials 302 offered in the 25 credential index 300 supplied by the user 4. So, for instance, in the case of the user 4 requesting a service for financial consideration if the user 4 communicates to the recipient 6 a credential index 300 referring to credit card details and an address, the service provider 6 30 determines how much credit it will extend to the user 4 saying it will offer services to a value up to £1,000 and

communicates this to the user 4 in step 408. Steps 410 and 412 correspond to steps 210 and 212 in Figure 2.

The determination by the service provider in step 406 may
5 be to offer no service at all or some other service level,
such as only offering certain types of service (say if
products can only be supplied to those of a minimum age).

If the user 4 is not satisfied with the service level
10 proposed by the service provider 6 at step 408, the user 4
can re-institute the procedure to seek another service
level offer from the service provider 6.

In a modification of the embodiment of Figure 4, in steps
15 404 the user 4 can provide to service provider 6 a
plurality of credential indices 300 from which (as
described in relation to Figure 4) the service provider 6
determines for each credential index a corresponding
service level the service provider is willing to offer.
20 The service provider 6 therefore communicates to the user
4 a plurality of service level indicators linked (or
otherwise cross-referenced) to the corresponding
credential indices, respectively. The user 4 then
determines which service level it wishes to select based
25 on the user's assessment of the credentials required by
the service provider 6 for the corresponding service. The
user 4 then communicates the credential 302 to the service
provider 6 (step 410).

30 Preferred embodiments of the present invention put into
the control of the user the decision of which credential
to provide to a service provider.

Further, an exchange of information takes place between user and service provider enabling the user to find a suitable service level according to the credentials the 5 user is willing to provide to the service provider.

It is noted that although reference is made to a "service provider" in the preferred embodiments, the recipient of communication need not be the actual provider of the 10 service.

Communications for the present invention may be encrypted.

The reader's attention is directed to all papers and 15 documents which are filed concurrently with or previous to this specification in connection with this application and which are open to public inspection with this specification, and the contents of all such papers and documents are incorporated herein by reference.

20 All of the features disclosed in this specification (including any accompanying claims, abstract and drawings), and/or all of the steps of any method or process so disclosed, may be combined in any combination, 25 except combinations where at least some of such features and/or steps are mutually exclusive.

Each feature disclosed in this specification (including any accompanying claims, abstract and drawings), may be 30 replaced by alternative features serving the same, equivalent or similar purpose, unless expressly stated otherwise. Thus, unless expressly stated otherwise, each

feature disclosed is one example only of a generic series of equivalent or similar features.

The invention is not restricted to the details of the
5 foregoing embodiment(s). The invention extend to any novel one, or any novel combination, of the features disclosed in this specification (including any accompanying claims, abstract and drawings), or to any novel one, or any novel combination, of the steps of any method or process so
10 disclosed.

Claims

1. A credential transfer method for use on a distributed electronic network, the method comprising the steps of
5 a sender communicating to a recipient a credential index comprising an index referring to at least one credential, the recipient selecting at least one of the credentials from the index of at least one credential provided by the sender, the recipient
10 communicating to the sender an indication of the selected at least one credential and the sender providing to the recipient at least one credential corresponding to the selected at least one credential.
- 15 2. A credential transfer method according to claim 1, in which the method comprises the additional step of determining whether the at least one credential is sufficient and communicating the result of the determination to the sender.
20
- 25 3. A credential transfer method according to claim 1, in which the method comprises the additional step of determining a service level according to the at least one credential indexed in the credential index and the recipient communicating the service level to the sender.
- 30 4. A credential transfer method according to any preceding claim, in which the sender communicates a plurality of credential indices to the recipient.

5. A credential transfer method according to claim 4, in which the method comprises the additional step of determining a service level according to each of the plurality of credential indices communicated to the recipient by the sender and communicating the service level corresponding to at least one of the credential indices to the sender.
10. A credential transfer method according to claim 5, in which a service level is communicated to the sender for each credential index communicated to the recipient by the sender.
15. A credential transfer method according to any preceding claim, in which the credential comprises a digital credential.
20. A credential transfer method according to any preceding claim, in which the credential index comprises indices to a plurality of credentials.
25. A credential transfer method according to claim 8, in which the method comprises the additional step of the sender selecting a credential index from a plurality of available credential indices.
30. A method of communication for use on a distributed electronic network, which method comprises a credential transfer method according to any preceding claim.

11. A system configured and adapted to operate according to any preceding claim.

12. A digital credential index comprising an index to at least one credential.

13. A digital credential index according to claim 12, in which the credential index comprises indices to a plurality of credentials.

10

14. A credential transfer method substantially as described herein, with reference to the accompanying drawings.

15

15. A method of communication substantially as described herein, with reference to the accompanying drawings.

16. A digital credential index substantially as described herein, with reference to the accompanying drawings.

20

Abstract**Improvements in and Relating to Credential Transfer
Methods**

5

The present invention discloses a credential transfer method for use on a distributed electronic network (2), the method comprising the steps of a sender (4) communicating to a recipient (6) a credential index (300) comprising an index referring to at least one credential (302), the recipient (6) selecting at least one of the credentials (302) from the index (300) of at least one credential provided by the sender (4), the recipient (6) communicating to the sender (4) an indication of the selected at least one credential (302) and the sender (4) providing to the recipient (6) at least one credential (302) corresponding to the selected at least one credential. A corresponding method of communication, system and digital credential index are also disclosed.

20

Figure 3

25

THIS PAGE BLANK (USPTO)